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JUL 17 2006
PATENT & TRADEMARK OFFICE

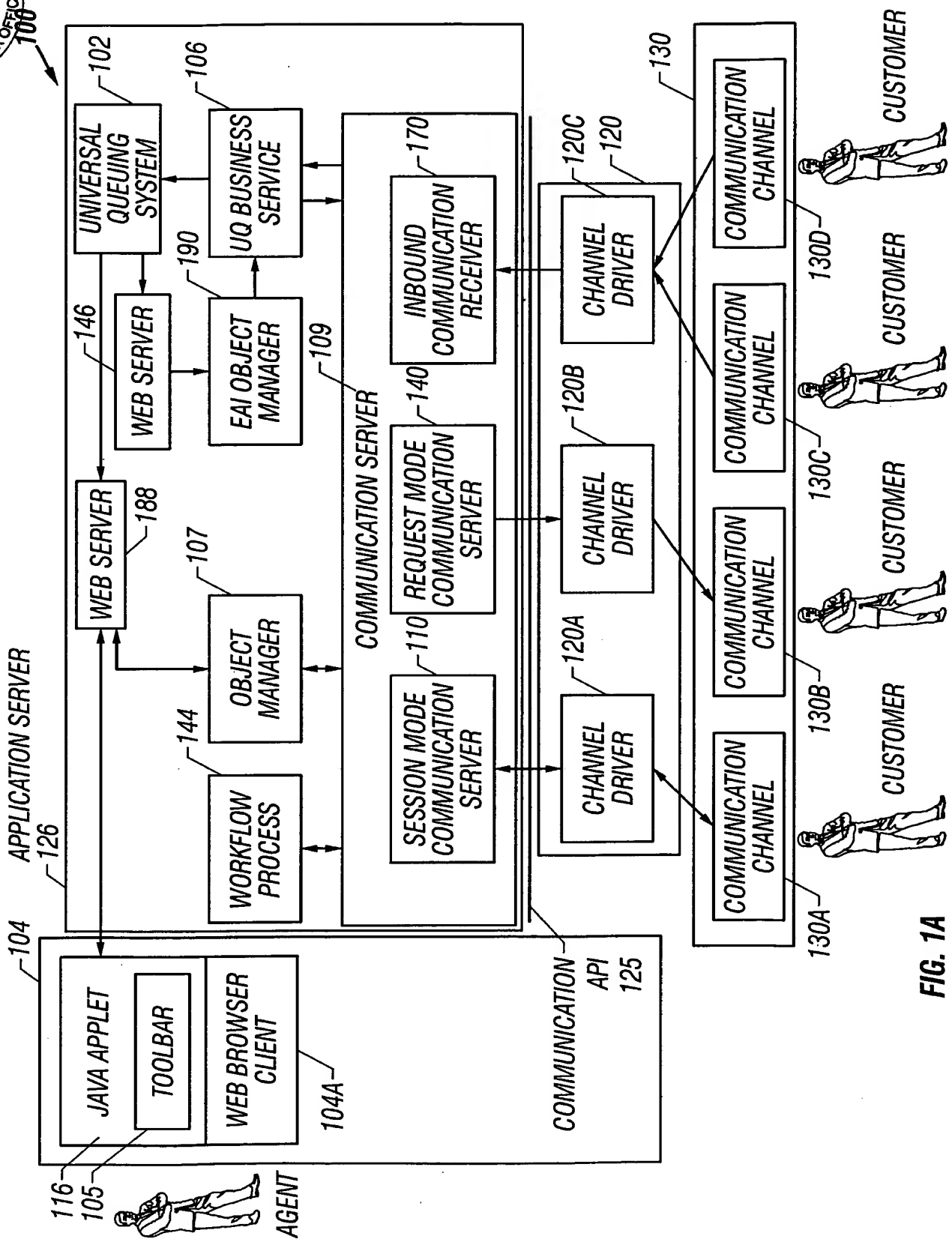

FIG. 1A

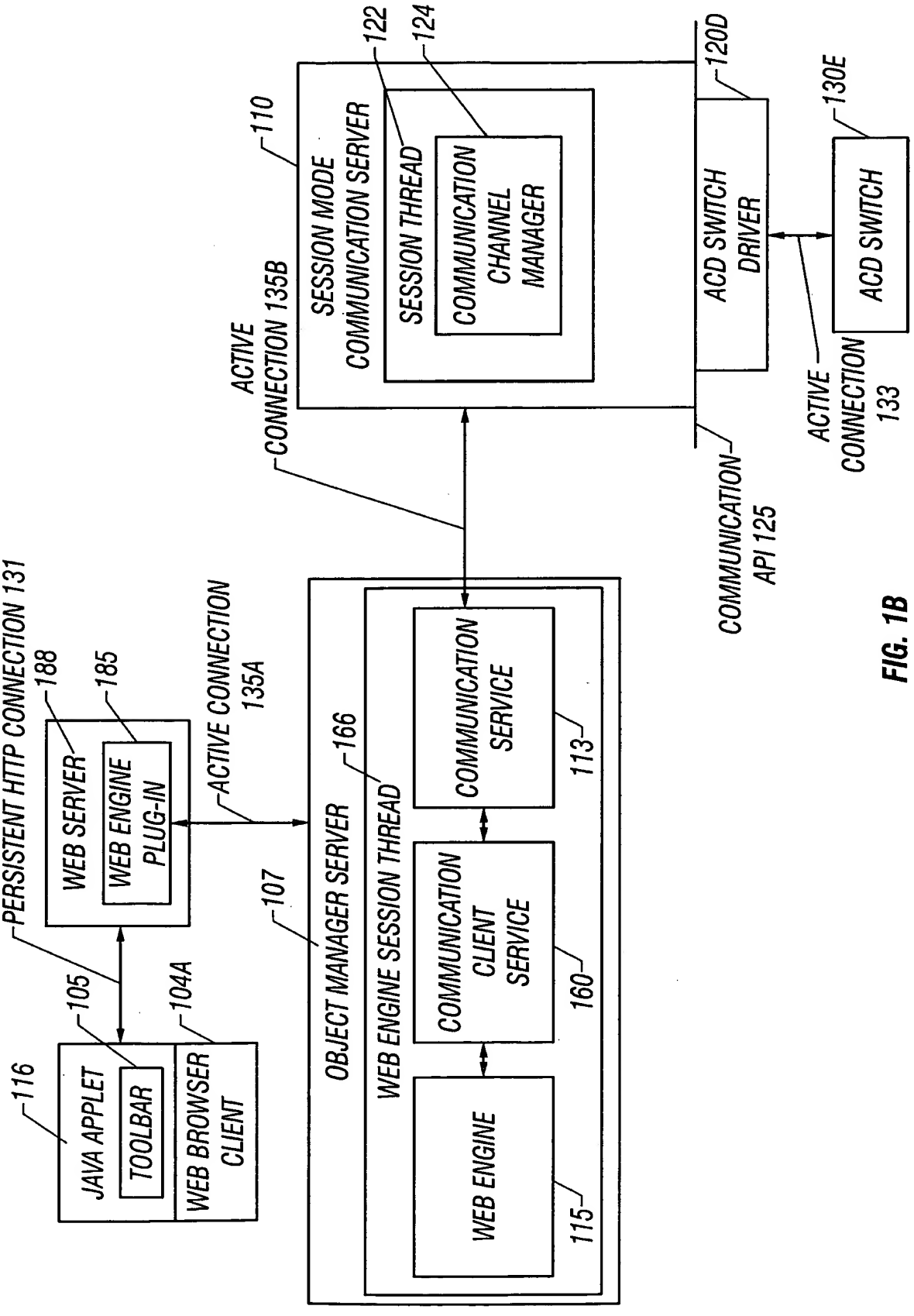
110
SESSION MODE COMMUNICATION SERVER
122
124
SESSION THREAD
COMMUNICATION CHANNEL MANAGER
ACTIVE CONNECTION 135B
120D
ACD SWITCH DRIVER
130E
ACD SWITCH
ACTIVE CONNECTION 133
COMMUNICATION API 125
PERSISTENT HTTP CONNECTION 131
188
WEB SERVER
185
WEB ENGINE PLUG-IN
ACTIVE CONNECTION 135A
166
OBJECT MANAGER SERVER
WEB ENGINE SESSION THREAD
COMMUNICATION SERVICE
113
107
COMMUNICATION CLIENT SERVICE
160
105
104A
116
JAVA APPLET
TOOLBAR
WEB BROWSER CLIENT
WEB ENGINE
115

FIG. 1B

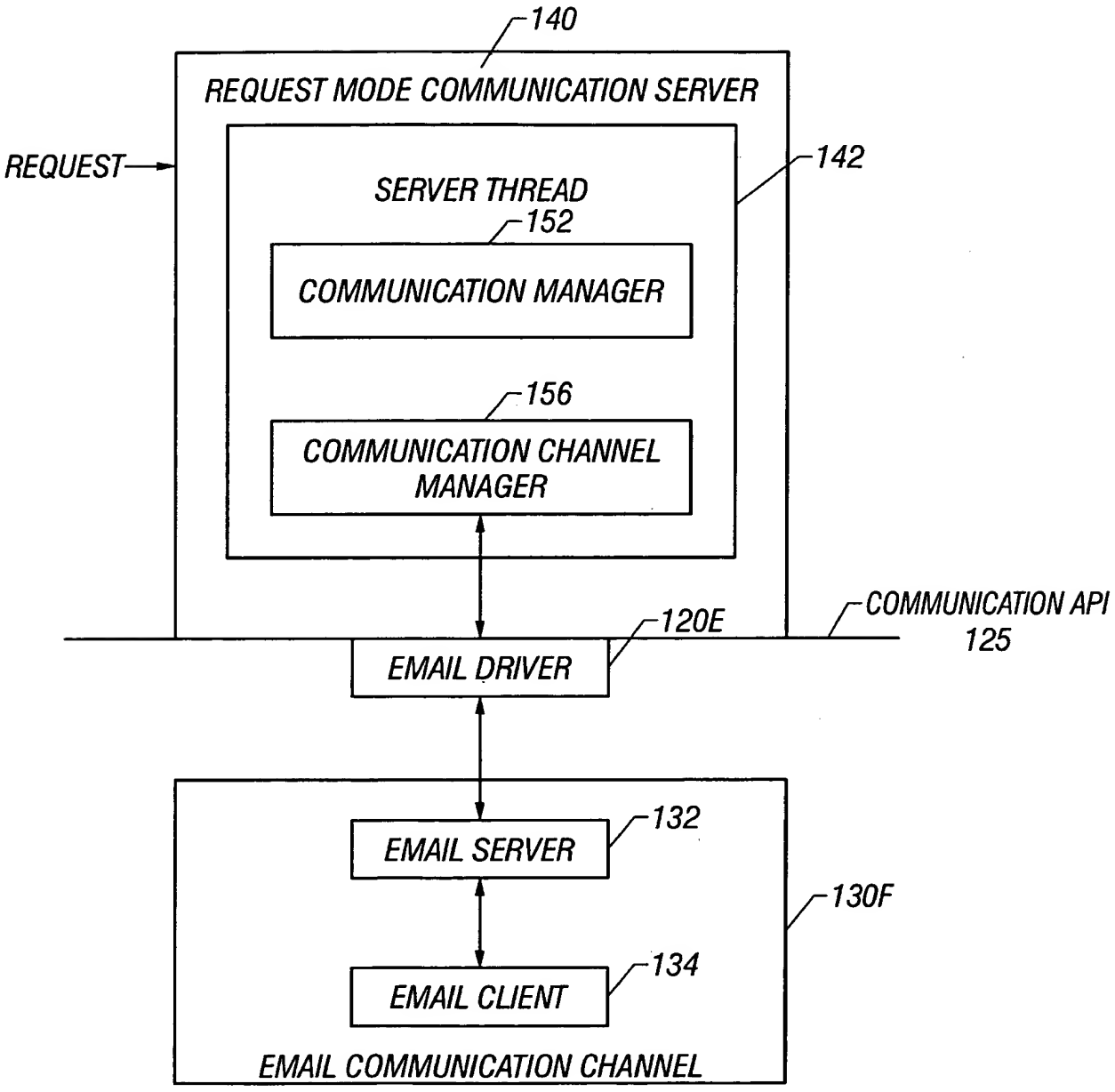
140
REQUEST MODE COMMUNICATION SERVER
REQUEST
142
SERVER THREAD
152
COMMUNICATION MANAGER
156
COMMUNICATION CHANNEL MANAGER
COMMUNICATION API 125
120E
EMAIL DRIVER
132
EMAIL SERVER
130F
134
EMAIL CLIENT
EMAIL COMMUNICATION CHANNEL

FIG. 1C

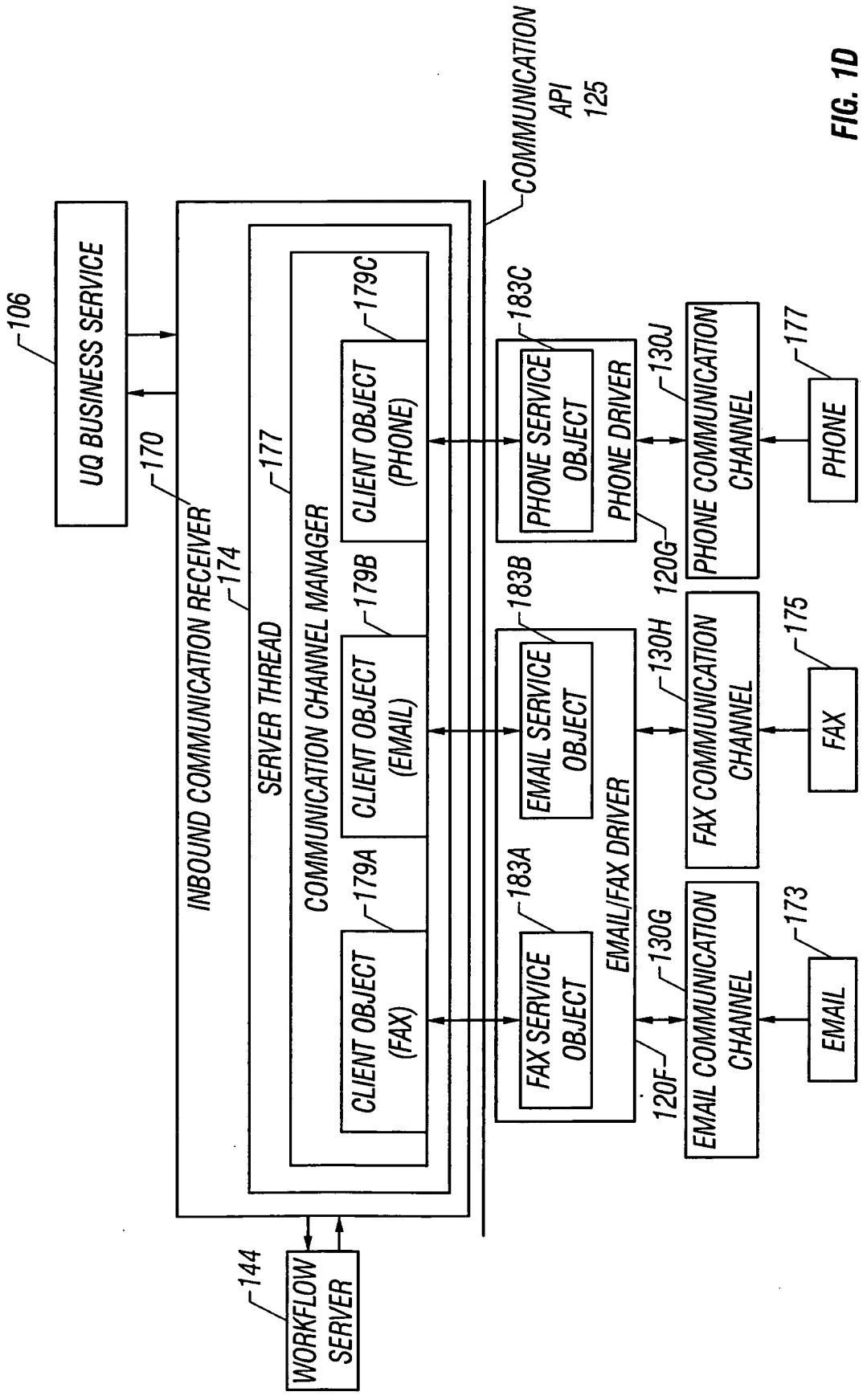
106
UQ BUSINESS SERVICE
170
INBOUND COMMUNICATION RECEIVER
174
SERVER THREAD
177
COMMUNICATION CHANNEL MANAGER
CLIENT OBJECT (FAX)
179A
CLIENT OBJECT (EMAIL)
179B
CLIENT OBJECT (PHONE)
179C
COMMUNICATION API 125
FAX SERVICE OBJECT
183A
EMAIL SERVICE OBJECT
183B
PHONE SERVICE OBJECT
183C
EMAIL/FAX DRIVER
120F
130G
130H
PHONE DRIVER
120G
130J
EMAIL COMMUNICATION CHANNEL
FAX COMMUNICATION CHANNEL
PHONE COMMUNICATION CHANNEL
EMAIL
173
FAX
175
PHONE
177
WORKFLOW SERVER
144

FIG. 1D

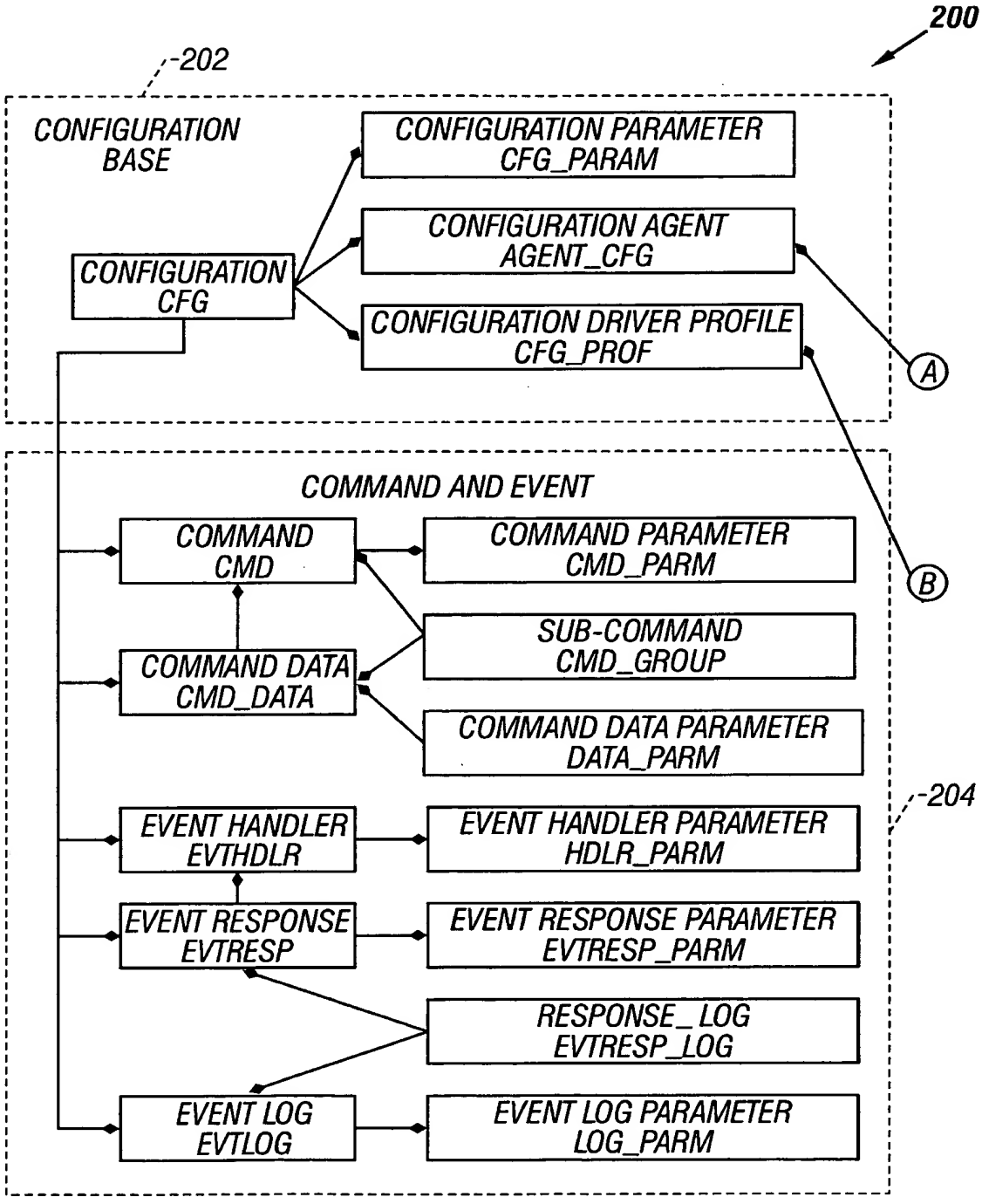
200
202
CONFIGURATION BASE
CONFIGURATION CFG
CONFIGURATION PARAMETER CFG_PARAM
CONFIGURATION AGENT AGENT_CFG
CONFIGURATION DRIVER PROFILE CFG_PROF
A
B
COMMAND AND EVENT
COMMAND CMD
COMMAND PARAMETER CMD_PARM
COMMAND DATA CMD_DATA
SUB-COMMAND CMD_GROUP
COMMAND DATA PARAMETER DATA_PARM
204
EVENT HANDLER EVTHDLR
EVENT HANDLER PARAMETER HDLR_PARM
EVENT RESPONSE EVTRESP
EVENT RESPONSE PARAMETER EVTRESP_PARM
RESPONSE_LOG EVTRESP_LOG
EVENT LOG EVTLOG
EVENT LOG PARAMETER LOG_PARM

FIG. 2-1

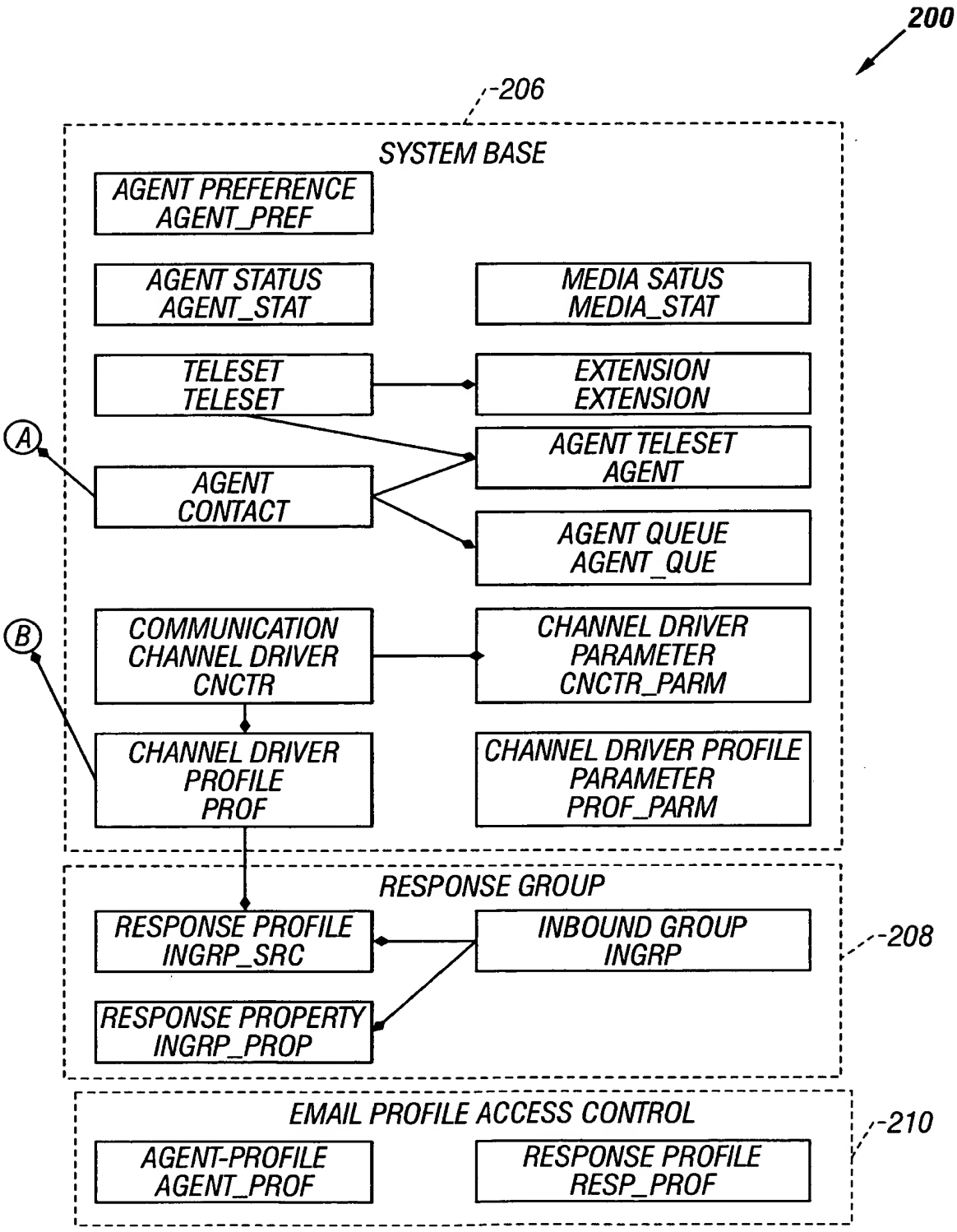
200
206
SYSTEM BASE
AGENT PREFERENCE
AGENT_PREF
AGENT STATUS
AGENT_STAT
MEDIA SATUS
MEDIA_STAT
TELESET
TELESET
EXTENSION
EXTENSION
A
AGENT TELESET
AGENT
AGENT
CONTACT
AGENT QUEUE
AGENT_QUE
B
COMMUNICATION
CHANNEL DRIVER
CNCTR
CHANNEL DRIVER
PARAMETER
CNCTR_PARM
CHANNEL DRIVER
PROFILE
PROF
CHANNEL DRIVER PROFILE
PARAMETER
PROF_PARM
RESPONSE GROUP
RESPONSE PROFILE
INGRP_SRC
INBOUND GROUP
INGRP
208
RESPONSE PROPERTY
INGRP_PROP
EMAIL PROFILE ACCESS CONTROL
210
AGENT-PROFILE
AGENT_PROF
RESPONSE PROFILE
RESP_PROF

FIG. 2-2

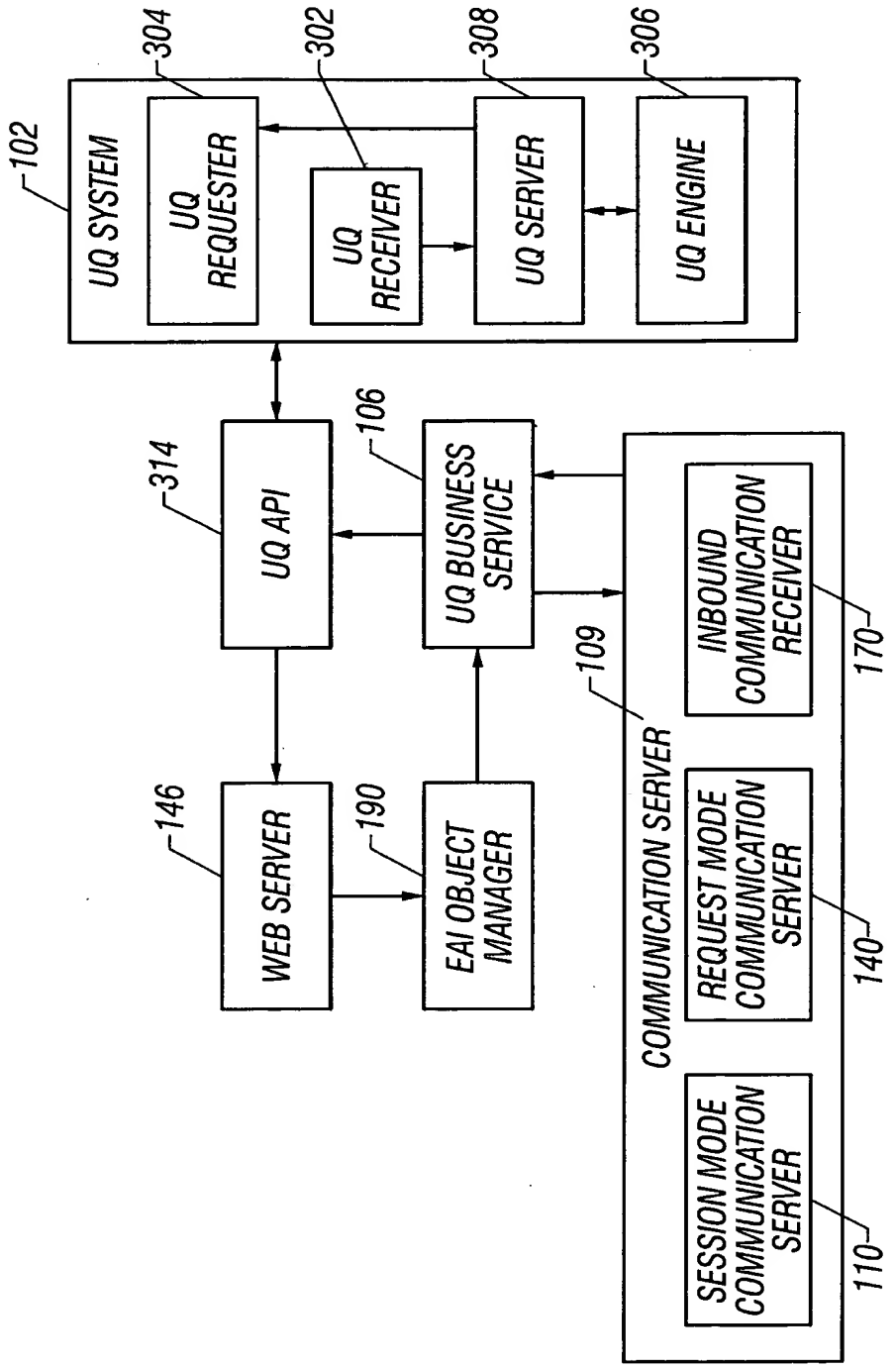
102
UQ SYSTEM
304
UQ REQUESTER
302
UQ RECEIVER
308
UQ SERVER
306
UQ ENGINE
314
UQ API
106
UQ BUSINESS SERVICE
109
COMMUNICATION SERVER
INBOUND COMMUNICATION RECEIVER
170
REQUEST MODE COMMUNICATION SERVER
140
SESSION MODE COMMUNICATION SERVER
110
146
WEB SERVER
190
EAI OBJECT MANAGER

FIG. 3

FIG. 4A: TABLE UQ_CFG

Column_Name	Type	Length	Comments
NAME	Varchar	75	
SERVER_NAME	Varchar	75	
SERVER_PORT	Number	10	
RECEIVER_NAME	Varchar	75	
RECEIVER_PORT	Number	10	

FIG. 4B: TABLE UQ_CFG_PARAM

Column_Name	Type	Length	Comments
UQ_CFG_ID	Varchar	15	
NAME	Varchar	50	
VALUE	Varchar	50	

FIG. 4C: TABLE UQ_ROUTERULES

Column_Name	Type	Length	Comments
Rule ID	VarChar	75	User defined name of the route
PRIORITY_CD	Varchar	30	Lower the value, higher the priority
MEDIA_TYPE_CD	VarChar	30	Select from list of values including "PBX", "Web Chat", "Web Collaboration", "Fax", "E-Mail"
MEDIA_SERVICE_LEVEL	Number	10	The number of seconds by which the majority of the work items need to be handled for a media type to which the routing rule corresponds
ACTIVE_FLG	Char	1	Indicates whether the route is active or not. If the route is not active, information for this route will not be passed to UQ engine
SERVICE_LEVEL	Number	10	The number of seconds by which the majority of the work items need to be handled in the route
CAPACITY	Number	10	Maximum capacity of this route. Alarm is raised when the number of queued item exceeds the CAPACITY
SELECTION CRITERIA	Char		
IsContact	Boolean	1	
TIME_OUT_SCND	Number	10	Time is second in which when the work item is not server, the first escalation rule will be effective
RouteToUnavailable	Boolean	1	Can a workitem in this route be routed to an agent who is not available?

FIG. 4D: TABLE UQ_ROUTE_PROP

Column_Name	Type	Length	Comments
UQ_ROUTE_ID	Varchar	15	
NAME	Varchar	75	Name of the property
VALUE	Varchar	75	Value of the property

FIG. 4E: TABLE UQ_ROUTE_ESCL

Column_Name	Type	Length	Comments
UQ_ROUTE_ID	Varchar	15	
NAME	Varchar	75	Name of the escalation rules
TIME_OUT_SCND	Number	10	Time in seconds in which the escalation rule will be timed out. Zero time means waiting indefinitely.
SEQ_NUM	Number	10	Order of escalation rules

FIG. 4F: TABLE UQ_RTESCL_RUL

Column_Name	Type	Length	Comments
ROUTE_ESCL_ID	Varchar	15	
SKILL_NAME	Varchar	50	Skill
SKILL_ITEM	Varchar	50	Name of skill items. For example "English" for Language skill. If skill item is null, it is a substitution of language from the work item data property. This is typically used when different rules for different languages are not required. Languages can be retrieved from the work item data property.
EXPERTISE	Varchar	30	Level of skill is chosen from a list of values, for example: 3=EXPERT 2=INTERMEDIATE 1=NOVICE 0=NO_SKILL

Application Serial No.: 09/895,456
First-Named Inventor: Anil Kumar Annadata
Title: System And Method For Multi-Channel Communication Queuing Using Routing And Escalation Rules

FIG. 4G: TABLE UQ_SKL_MAP

Column_Name	Type	Length	Comments
ROUTE_PROP_NAME	Varchar	75	Route property name
ROUTE_PROP_VALUE	Varchar	75	Route property value
SKILL_NAME	Varchar	75	Skill name
SKILL_VALUE	Varchar	75	Skill value

FIG. 4H: TABLE UQ_USER_MEDIA`

Column_Name	Type	Length	Comments
USER_ID	Varchar	15	Agent number
MEDIA_TYPE_CD	Varchar	30	Type of media
MAX_NUM_SESSIONS	Number	10	Maximum sessions of this media type allowed for this agent.

FIG. 4I: TABLE UQ_ROUTE_STS

Column_Name	Type	Length	Comments
ROUTE_ID	Varchar	75	
START_TS	Date Time		Start time
END_TS	Date Time		End time
SOURCE_NAME	Varchar	75	The route name
AVG_WAIT_TM	Number	10	Waiting time during the given period
AVG_HANDLE_TM	Number	10	Handling time during the period
NUM_ABANDONED_REQS	Number	10	Number of abandoned requests
AVG_ABANDONING_TM	Number	10	Average time until request is abandoned
LONGEST_WAIT_TM	Number	10	Longest waiting time in seconds
AVAIL_USER_PCT	Number	10	Percentage of available agents
AUX_WORK_USER_PCT	Number	10	Percentage of auxwork agents
TOTAL_NUM_WORKITEMS	Number	10	Total number work items
TOTAL_NUM_UNASSIGNED _WORKITEMS	Number		Total number of unassigned work items.
TOTAL_NUM_DELIVERED _WORKITEM	Number		Total number of delivered work items.
TOTAL_NUM_SERVICE_LEVEL _WORKITEM	Number		Total number of service level work items.
Comments	Varchar	250	

FIG. 4J: TABLE UQ_MEDIA_STS

Column_Name	Type	Length	Comments
MEDIA_TYPE_CD	Varchar	30	
START_TS	Date Time		
END_TS	Date Time		
SOURCE_NAME	Varchar	75	Either the route name
AVG_WAIT_TM	Number	10	Waiting time during the given period
AVG_HANDLE_TM	Number	10	Handling time during the period
NUM_ABANDONED_REQS	Number	10	Number of abandon requests
AVG_ABANDONING_TM	Number	10	
LONGEST_WAIT_TM	Number	10	Longest waiting time in seconds
AVAIL_USER_PCT	Number	10	Percentage of available agents
AUX_WORK_USER_PCT	Number	10	Percentage of auxwork agents
TOTAL_NUM_WORKITEMS	Number	10	Total number of agents if each agent handles only one work item
TOTAL_NUM_UNASSIGNED_WORKITEM	Number		
TOTAL_NUM_DELIVERED_WORKITEM	Number		
TOTAL_NUM_SERVICE_LEVEL_WORKITEM	Number		
Comments	Varchar	250	

FIG. 4K: TABLE UQ_AGENT_STS

Column_Name	Type	Length	Comments
USER_ID	Varchar	15	
START_TS	Date Time	7	
END_TS	Date Time	7	
CONTACT_ID	Varchar	15	
AVAIL_PCT	Number		Percentage available
BUSY_PCT	Number		Percentage busy
AUX_WORK_PCT	Number		Percentage auxwork
NUM_COMM_ITEM_SRVD	Number		Number of work item served
Comments	Varchar	250	

FIG. 4L: TABLE UQ_ERR_LOG

Column_Name	Type	Length	Comments
Name	DateTime	7	
TYPE_CD	Varchar	30	Either alarm or error
Severity	Varchar	30	
ERROR_CODE	Varchar	10	Alarm code or error code
MSG_DESC	Varchar	250	Template for message

FIG. 4M: S_JOURNAL

Column_Name	Type	Length	Comments
WORK_ITEM_ID	Varchar	250	Work item ID
ROUTE_NAME	Varchar	75	The name of the route. Use the actual name instead of ID because the nature of the route could be changing from time to time.

FIG. 4N: S_JOURNAL_WORKITEM_PROPERTY

Column_Name	Type	Length	Comments
JOURNAL_ID	Varchar	15	
Name	Varchar	75	Name of the property
Value	Varchar	75	Value of the property

FIG. 4O: S_JOURNAL_ESC_HIST

Column_Name	Type	Length	Comments
JOURNAL_ID	Varchar	15	
ESC_STEP_NAME	Varchar	75	
START_TIME	Date Time		Start time
END_TIME	Date Time		
RESULT	Varchar	75	

Application Serial No.: 09/895,456
First Named Inventor: Anil Kumar Annadata
Title: System And Method For Multi-Channel Communication Queuing Using Routing And Escalation Rules

FIG. 4P: S_JOURNAL_STATE_HIST

Column_Name	Type	Length	Comments
JOURNAL_ID	Varchar	15	
USERID	Varchar	15	
START_TIME	Date Time		Start time
END_TIME	Date Time		
AGENTSTATE	Varchar	50	
REASON	Varchar	50	

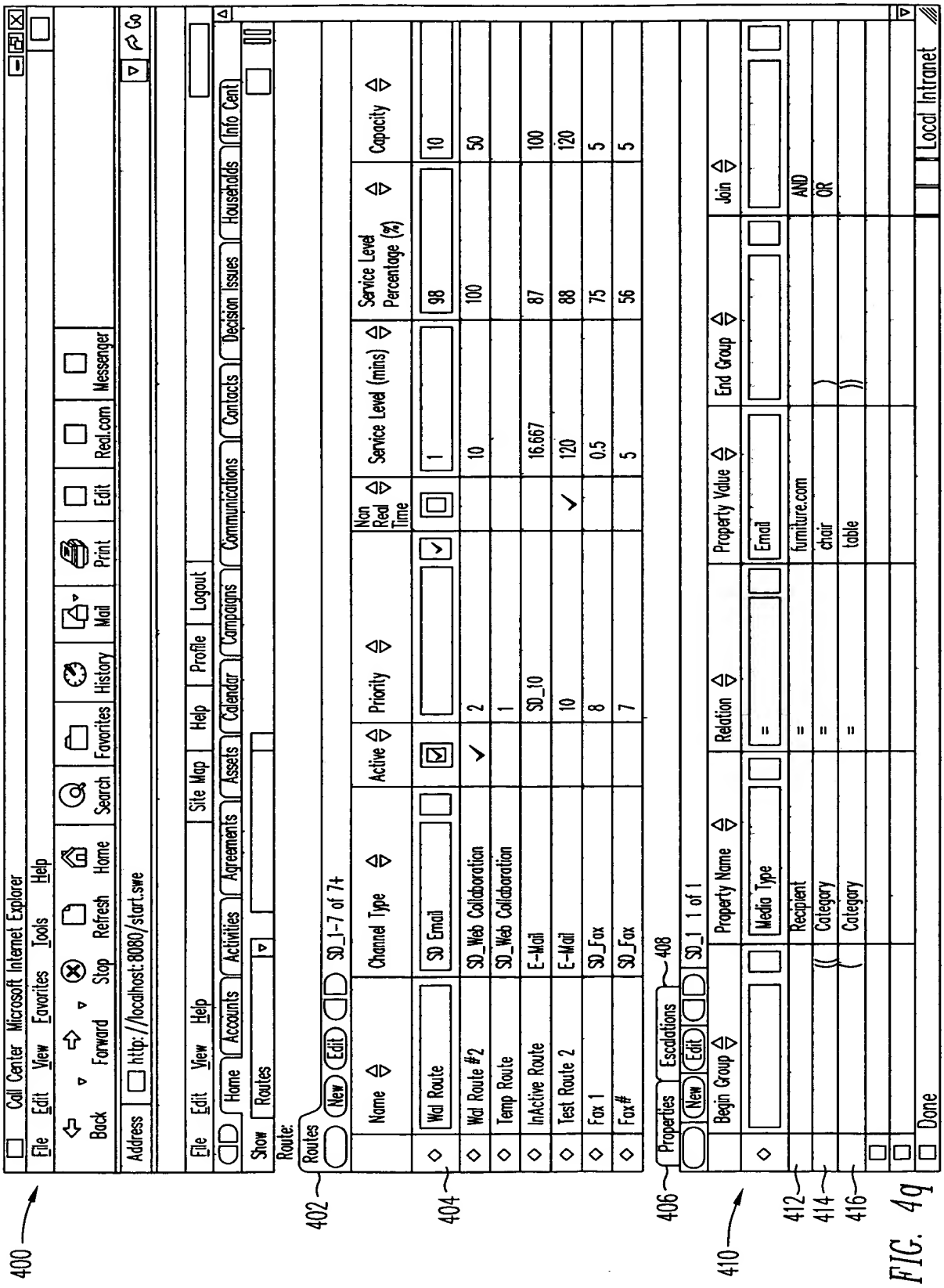
400
Call Center Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Real.com Messenger
Address http://localhost:8080/start.swe
File Edit View Help
Site Map Help Profile Logout
Home Accounts Activities Agreements Assets Calendar Campaigns Communications Contacts Decision Issues Households Info Cent
Show Routes
Route:
402
Routes
New Edit SD_1-7 of 7+
404
Name Channel Type Active Priority Non Real Time Service Level (mins) Service Level Percentage (%) Capacity
Wal Route SD Email 1 98 10
Wal Route #2 SD_Web Collaboration 2 10 100 50
Temp Route SD_Web Collaboration 1
InActive Route E-Mail SD_10 16.667 87 100
Test Route 2 E-Mail 10 120 88 120
Fax 1 SD_Fax 8 0.5 75 5
Fax# SD_Fax 7 5 56 5
406
Properties Escalations 408
New Edit SD_1 1 of 1
410
Begin Group Property Name Relation Property Value End Group Join
Media Type = Email
412
Recipient = furniture.com AND
414
Category = chair OR
416
Category = table
Done
Local Intranet

FIG. 4q

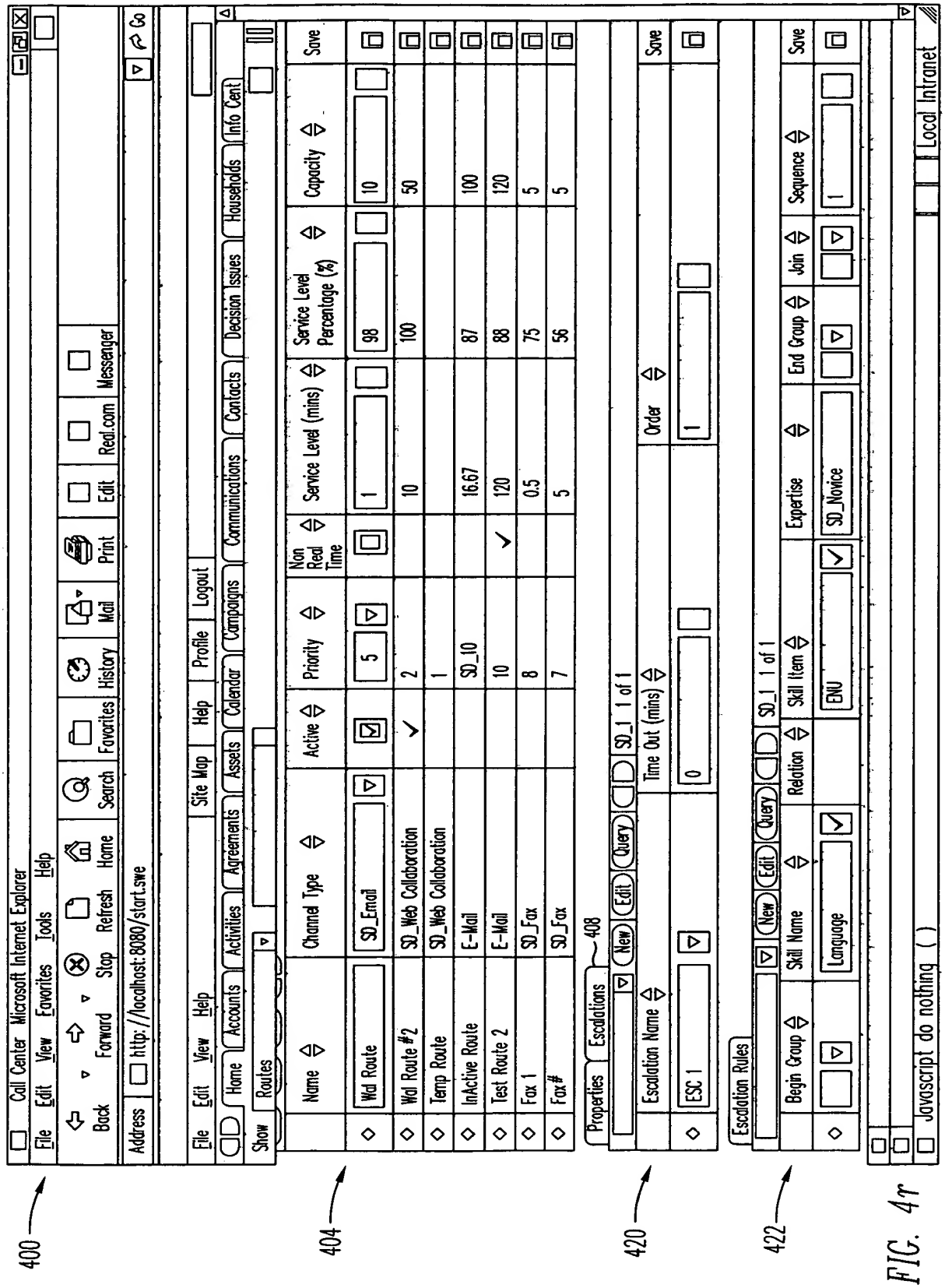
400
404
420
422
Call Center Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Real.com Messenger
Address http://localhost:8080/start.swe
File Edit View Help
Site Map Help Profile Logout
Home Accounts Activities Agreements Assets Calendar Campaigns Communications Contacts Decision Issues Households Info Cent
Show Routes
Name Channel Type Active Priority Non Real Time Service Level (mins) Service Level Percentage (%) Capacity Save
Wal Route SD_Email 5
Wal Route #2 SD_Web Collaboration 2 10 100 50
Temp Route SD_Web Collaboration 1
InActive Route E-Mail SD_10 16.67 87 100
Test Route 2 E-Mail 10 120 88 120
Fax 1 SD_Fax 8 0.5 75 5
Fax# SD_Fax 7 5 56 5
Properties Escalations 408
New Edit Query SD_1 1 of 1
Escalation Name Time Out (mins) Order Save
ESC 1 0 1
Escalation Rules
New Edit Query SD_1 1 of 1
Begin Group Skill Name Relation Skill Item Expertise End Group Join Sequence Save
Language ENU SD_Novice 1
Javascript do nothing ( )
Local Intranet

FIG. 4r

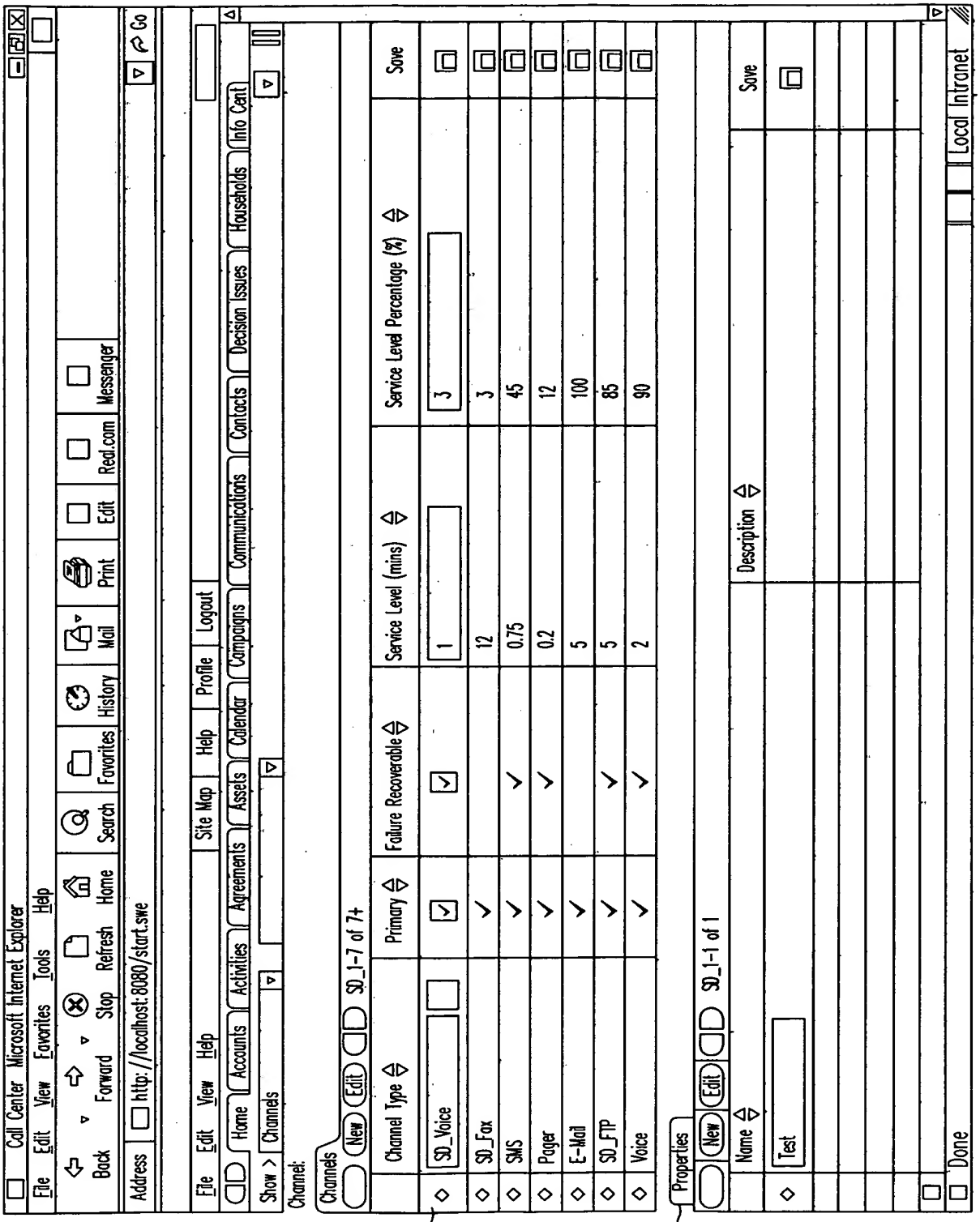
Call Center Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Real.com Messenger
Address http://localhost:8080/start.swe
Go
File Edit View Help
Site Map Help Profile Logout
Home Accounts Activities Agreements Assets Calendar Campaigns Communications Contacts Decision Issues Households Info Cent
Show > Channels
Channel:
Channels
New Edit SD_1-7 of 74
Channel Type
Primary
Failure Recoverable
Service Level (mins)
Service Level Percentage (%)
Save
SD_Voice
SD_Fax
SMS
Pager
E-Mail
SD_FTP
Voice
Properties
New Edit SD_1-1 of 1
Name
Description
Save
Test
Done
Local Intranet
424
426
428
430

FIG. 4S